

### REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1, 2, 6, 7, 11, 14, 18-22, 24, 30-34, 36, and 37 are currently pending. Claims 1, 31, and 36 have been amended; and Claim 35 has been cancelled without prejudice by the present amendment. The changes to the claims are supported by the originally filed specification and do not add new matter.

In the outstanding Office Action, Claims 31-37 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 9-12 and 18 of co-pending Application No. 10/842,482 (hereinafter "the '482 application"); Claims 1, 2, 6, 7, 11, 14, 18-22, and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,072,162 to Ito et al. (hereinafter "the '162 patent") in view of U.S. Patent No. 6,080,970 to Yoshida et al. and either U.S. Patent No. 4,057,707 to Allen (hereinafter "the '707 patent") or U.S. Patent No. 5,111,983 to Morita et al. (hereinafter "the '983 patent"); Claim 30 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the '162 and '970 patents in view of either the '707 or '983 patents, further in view of U.S. Patent No. 3,978,315 to Martin et al. (hereinafter "the '315 patent"); Claims 31-36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the '162 and '970 patents, in view of either the '707 or '983 patents, further in view of U.S. Patent No. 4,536,645 to Mio et al. (hereinafter "the '645 patent"); and Claim 37 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the '162, '970, and '645 patents, in view of either the '707 or '983 patents, further in view of the '315 patent.

Applicant wishes to thank the Examiner for the interview granted Applicant's representative on January 12, 2005, at which time a proposed amendment to Claims 1 and 31 was discussed. At the conclusion of the interview, the Examiner agreed that the '983 and

'707 patents fail to disclose an insulating covering comprising organic resin or an insulating covering comprising oxide glass including at least one of Pb and B. However, the Examiner indicated that further consideration of the claims upon formal submission of a response to the outstanding Office Action would be required.

Applicant respectfully submits that the rejection of Claims 31-37 under the judicially created doctrine of obviousness-type double patenting is rendered moot by the Terminal Disclaimer filed herewith.

Amended Claim 1 is directed to a ceramic heater to be used in the semiconductor industry for heating a wafer, comprising: (1) a disc-form ceramic substrate having a heating surface configured to heat the wafer, and comprising the nitride ceramic or carbide ceramic; (2) a resistance heating element comprising at least one circuit, the resistance heating element being arranged on an outermost surface of the ceramic substrate; and (3) an insulating covering deposited on the resistance heating element. Further, amended Claim 1 recites that the resistance heating element is positioned on an opposite side of the heating surface; the insulating cover does not inhibit heat flow to the wafer; and the insulating covering comprises oxide glass. Further, Claim 1 has been amended to clarify that the oxide glass includes at least one of Pb and B. The changes to Claim 1 are supported by the originally filed specification and do not add new matter.<sup>1</sup>

Applicant respectfully submits that the rejection of Claim 1 (and dependent Claims 2, 6, 7, 11, 14, 18-22, and 24) are rendered moot by the present amendment to Claim 1.

Regarding the rejection of Claim 1 under 35 U.S.C. § 103, the Office Action asserts that the '162 patent discloses everything in Claim 1 with the exception of the ceramic substrate being in disc-form and an insulating covering comprised of oxide glass, and relies on the '970 and either the '707 or '983 patents to remedy those deficiencies.

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<sup>1</sup> See, e.g., Tables 1, 2 and 3.

The '162 patent is directed to a device for heating a substrate and includes heating elements 14 and the heat diffusion plate 11 made of AlN.<sup>2</sup> However, as admitted in the Office Action, the '162 patent fails to disclose a disc-form ceramic substrate and the insulating covering recited in Claim 1. In particular, Applicant submits that the '162 patent fails to disclose an insulating covering comprising oxide glass including at least one of Pb or B.

The '970 patent is directed to a wafer heating apparatus comprising a heating resistor 4 buried in a substrate 2.<sup>3</sup> However, Applicant respectfully submits that the '970 patent fails to disclose a resistance heating element arranged on an outermost surface of a nitride or carbon ceramic substrate, as recited in amended Claim 1. Further, Applicant respectfully submits that the '970 patent fails to disclose an insulating covering that comprises oxide glass including at least one of Pb or B, as recited in amended Claim 1.

The '707 patent is directed to an electrical cooking or heating unit comprising a plate of a glassy material having heating elements 14 and 15 covered by a coating or overglaze 16. However, Applicant respectfully submits that the '707 patent fails to disclose an insulating covering comprising oxide glass including at least one of Pb and B, as recited in amended Claim 1.

The '983 patent is directed to a thermionic electron source comprising a ceramic substrate, a high density resistive film 2, and a vitreous protective coating layer 3. However, Applicant respectfully submits that the '983 patent is directed to non-analogous art. Moreover, Applicant respectfully submits that the '983 patent fails to disclose an insulating covering comprising oxide glass including at least one of Pb or B, as recited in amended Claim 1.

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<sup>2</sup> See '162 patent, Figure 2.

<sup>3</sup> See Figure 1b in column 4, lines 16-21, of the '970 patent.

Thus, no matter how the teachings of the '162, '970, '707, and '983 patents are combined, the combination does not teach or suggest a ceramic heater having an insulating covering comprising oxide glass including at least of Pb or B, as recited in Claim 1.

Accordingly, Applicant respectfully submits that amended Claim 1 (and dependent Claims 2, 6, 7, 11, 14, 18-22, and 24) patentably defines over any proper combination of the '162, '970, '707, and '983 patents.

Regarding the rejection of Claim 30 under 35 U.S.C. § 103, Applicants respectfully submit that the '315 patent fails to remedy the deficiencies of the '162, '970, '707, and '983 patents, as discussed above. Accordingly, Applicant respectfully submits that the rejection of Claim 30 is rendered moot by the present amendment to Claim 1.

Amended Claim 31 is directed to a ceramic heater to be used in the semiconductor industry for heating a wafer, comprising: (1) a disc-form ceramic substrate having a heating surface configured to heat a wafer, and comprising a nitride ceramic or carbide ceramic; (2) a resistance heating element comprising at least circuit, the resistance heating element being arranged on an outermost surface of the ceramic substrate; and (3) an insulating covering deposited on the resistance heating element. Further, Claim 31 recites that the resistance heating element is positioned on an opposite side of the heating surface, the insulating covering does not inhibit heat flow to the wafer, and the insulating covering comprises organic resin. Claim 31 has been amended to clarify that the insulating covering comprises organic resin. The changes to Claim 31 are supported by the originally filed specification and do not add new matter.<sup>4</sup>

Applicant respectfully submits that the rejection of Claim 31 (and dependent Claims 32-36) is rendered moot by the present amendment to Claim 31.

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<sup>4</sup> See, e.g., Tables 1, 2 and 3.

As admitted in the Office Action, the combined teachings of the '162, '970, '707, and '983 patents fail to disclose a ceramic heater having an insulating covering comprising resin.<sup>5</sup>

The '645 patent is directed to a solid body heating unit comprising sheet-like base 1, a refractory layer 2, an electroconductive layer 3, and an electrically insulative protective layer 6. The '645 patent discloses that the electroconductive layer 3 is covered with the protective layer 6 to protect the user from electric shock.<sup>6</sup> Further, the '645 patent discloses that the protective layer 6 is made of silicon resin or alumina. However, Applicant notes that the protective layer 6 disclosed by the '645 patent necessarily inhibits heat flow to the heating surface. Further, Applicant respectfully submits that the '645 patent fails to disclose an insulating covering comprising organic resin, as recited in amended Claim 31.

Thus, no matter how the teachings of the '162, '970, '707, '983, and '645 patents are combined, the combination does not teach or suggest an insulating covering deposited on a resistive heating element, wherein the insulating covering comprises organic resin, as recited in amended Claim 1. Accordingly, Applicant respectfully submits that Claim 31 (and dependent Claims 32-36) patentably defines over any proper combination of the '162, '970, '707, '983, and '645 patents.

Regarding the rejection of Claim 37 under 35 U.S.C. § 103, Applicant respectfully submits that the '315 patent fails to remedy the deficiencies of the '162, '970, '707, '983, and '645 patents, as discussed above. Accordingly, Applicant respectfully submits that the rejection of Claim 37 is rendered moot by the present amendment to Claim 31.

Thus, it is respectfully submitted that independent Claims 1 and 31 (and all associated dependent claims) patentably define over any proper combination of the '162, '970, '707, '983, '315, and '645 patents.

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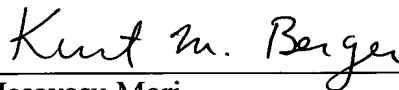
<sup>5</sup> See page 5 of the Office Action dated November 16, 2004.

<sup>6</sup> '645 patent, column 2, lines 32-34.

Consequently, in view of the present amendment and in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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